

**Abstract of the Disclosure**

A high frequency equalizer using a demultiplexing technique and a semiconductor device using the same are provided. The high frequency equalizer demultiplexes input data input through an input and output terminal into a plurality of input data items, each having a time difference that is the same as the period of the input data. The equalizer restores the lost high frequency data components of the plurality of demultiplexed input data items, multiplexes the restored plurality of data items, and sequentially outputs the restored data items one by one. Therefore, using this high frequency equalizer, it is possible to allow enough time to restore the lost high frequency component even though the period of the input data is reduced by an increase of the data transmission speed. Using this high frequency equalizer, it is possible to correctly restore the lost high frequency component even at a high data transmission speed. Therefore, according to the semiconductor device including the high frequency equalizer, the lost high frequency component of data can be restored even at a high data transmission speed.